

land, labeled var. *bilobata* in which the mantle has receded until only about half of the thickened lip is covered by the mantle, the posterior canal is wanting and the shape of the aperture closely resembles that of a small *A. occidentalis* var. *labradorensis*. The shell characters mentioned therefore seem of little generic value and it seems doubtful if there is any marked anatomical difference.

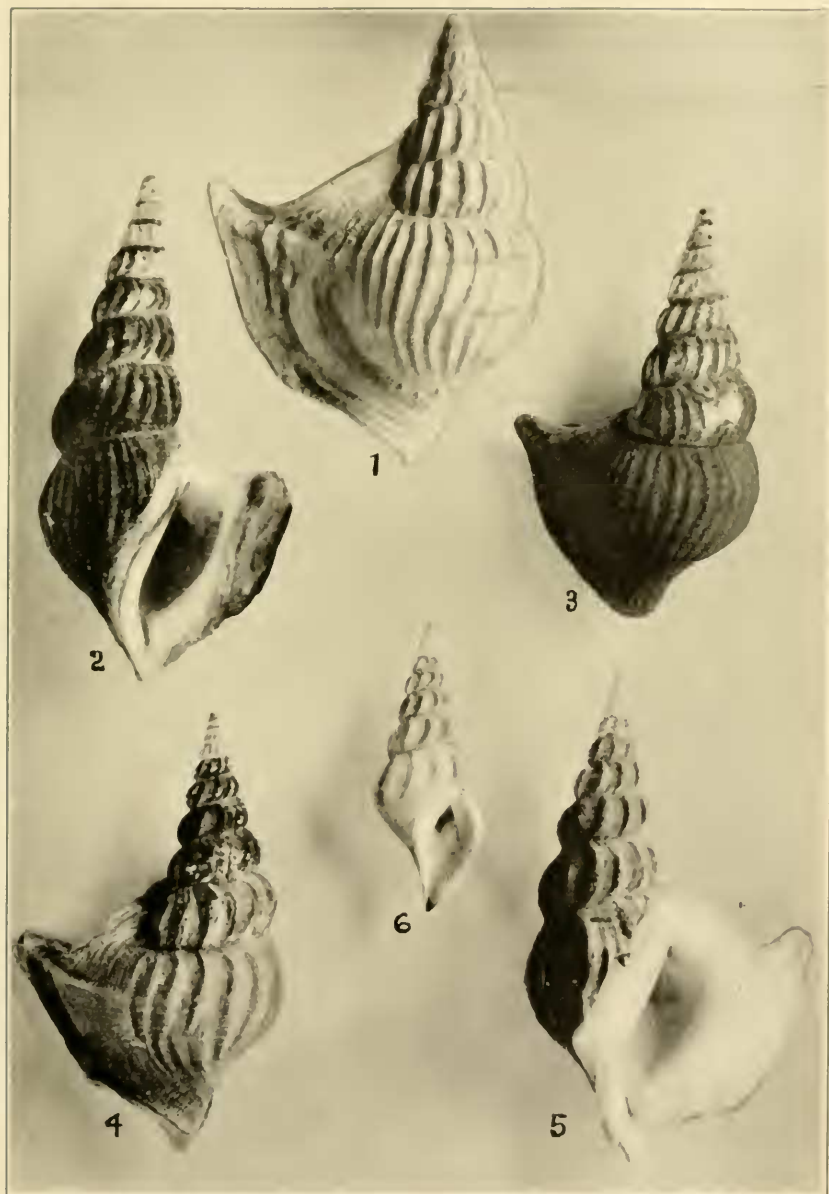
I am indebted to the Boston Society Natural History for the photograph of the varieties of this shell and to Mr. C. V. MacCoy for figure one.

DESERT HELICIDS OF THE MICRARIONTA HUTSONI
GROUP

BY G. WILLETT

For some time past the writer has had in his collection shells of small *Micrariontas* from the California desert that were apparently closely related to *Micrarionta hutsoni* Clapp and *M. desertorum* Pilsbry and Ferriss. Awaiting a better study series of these two Arizona forms, the disposition of the California shells has been held in abeyance. The opportunity to visit southwestern Arizona arrived recently and on March 7, 1930, the writer and his wife visited the type locality of *M. desertorum*, collecting eighty specimens, a considerable number of which were living. On the following day the approximate type locality of *M. hutsoni* was visited and about 50 specimens, both living and dead, were secured.

The type locality of *M. desertorum* given by Pilsbry and Ferriss, (NAUTILUS XXI, 134), is "twelve miles south from Parker, Arizona." As there is only one mountain that this description could possibly apply to, it seems safe to assume that the locality visited by us was the correct one. The type locality of *M. hutsoni*, "eight miles from Quartzite, Arizona," (NAUTILUS XX, 136), is less definite but it must lie in the Dome Rock Mountains, the range west of Quartz-



THE VARIATION OF APORRHAIIS OCCIDENTALIS, Beck

ite and the only one within eight miles of the settlement. Our lot of shells obtained in this range, about four miles west of Quartzite, are apparently identical with specimens from the type lot that were given to the writer by Dr. S. S. Berry.

After a careful study of these specimens, together with those from the California desert above mentioned, it seems to the writer that there are at present four known races of *Micrarionta hutsoni*, as follows.

Micrarionta hutsoni hutsoni Clapp. From the Dome Rock Mountains, Yuma County, Arizona. Apparently the largest of the group. Though the diameter of the largest specimen of the type lot is given as 15 mm., one specimen in our lot measures 16.5 mm. In typical *hutsoni* the white zone above the narrow peripheral band is abruptly bordered by another brown band that extends to the suture. This is lighter in color, consequently less conspicuous, than the band above the periphery, and about twice as wide. It is particularly apparent inside the aperture and gives the shell the appearance of being doubly banded.

Micrarionta hutsoni desertorum Pilsbry and Ferriss. After comparing our series of *desertorum* with *hutsoni* it seems apparent that the former should be considered a somewhat stunted, albinistic form of the latter. The northern extremity of the Dome Rock Mountains, the habitat of *hutsoni*, is only about fifteen miles from the small, unnamed mountain that is the type locality of *desertorum*. Though the shell of *desertorum* is said to be unbanded, eighteen specimens out of our series of eighty show traces of bands: furthermore, an albinistic specimen of *hutsoni*, taken alive, together with normal specimens is indistinguishable from *desertorum*. That these two forms intergrade geographically is doubtful, as several miles of desert intervene between their mountain habitats, but that they do intergrade by individual variation is clearly shown in our series. Our largest specimen of *desertorum* has a maximum diameter of 14.4 millimeters.